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SEQUENCE LISTING

<110> Mitchell, Lloyd G.
Garcia-Blanco, Mariano A.
Puttaraju, Madaiah
Mansfield, Gary S.

<120> METHODS AND COMPOSITIONS FOR USE IN
SPLICEOSOME MEDIATED RNA TRANS-SPlicing IN PLANTS

<130> A31304-B-A-C 072874.0138

<140> 09/756,097
<141> 2001-01-08

<150> 09/158,863
<151> 1998-09-23

<150> 09/133,717
<151> 1998-08-13

<150> 09/087,233
<151> 1998-05-28

<150> 08/766,354
<151> 1996-12-13

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29

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<400> 17
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<400> 18
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29

<210> 20
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<213> Corynebacterium diphtheriae

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<210> 21
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<212> DNA
<213> *Corynebacterium diphtheriae*

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<210> 22
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<400> 22
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<210> 23
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<213> *Homo sapien*

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<213> *Homo sapien*

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<210> 27
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<400> 27
atcaggagtg gacagatcc
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<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<211> 38
<212> DNA
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<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 30
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<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<210> 32
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 32
gcatggtaac cctgcagggc ggcttcgtct aataatggga ctgggtg
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<210> 33
<211> 37
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<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

<400> 33
gcatggatcc tccggagggc ccctggcac cttccac
37

<210> 34

<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

<400> 34
ctgactgcag ggtaaccgga caaggacact gcttcacc
38

<210> 35
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

<400> 35
gcatggtaac cctgcagggg ctgctgctgt tgctg
35

<210> 36
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

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ctgaaagctt gttaaccagc tcaccatggt gggcag
37

<210> 37
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 37

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22

<210> 38
<211> 21
<212> DNA
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<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 38
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<210> 39
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<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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<212> DNA
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<400> 40
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<210> 41
<211> 35
<212> DNA
<213> Homo sapiens

<400> 41
acctctgcag gtgaccctgc agaaaaaaa agaag
35

<210> 42

<211> 30
<212> DNA
<213> Homo sapiens

<400> 42
acctctgcag acttcacttc taatgatgat
30

<210> 43
<211> 51
<212> DNA
<213> Homo sapien

<400> 43
acctgcggcc gcctaatgat gatgatgatg atgctcttct agttggcatg c
51

<210> 44
<211> 32
<212> DNA
<213> Homo sapien

<400> 44
gacctctcgaa gggatttggg gaattatgg ag
32

<210> 45
<211> 35
<212> DNA
<213> Homo sapien

<400> 45
ctgacctcgcg gccgctacag tttttttttt ggtgc
35

<210> 46
<211> 35
<212> DNA
<213> Homo sapien

<400> 46
ctgacctcgcg gccggccaaat tatctgaatc atgtg
35

<210> 47
<211> 32
<212> DNA
<213> Homo sapien

<400> 47
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32

<210> 48
<211> 21
<212> DNA
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<400> 48
ctaatgatga tgatgatgat g
21

<210> 49
<211> 21
<212> DNA
<213> Homo sapien

<400> 49
cgccataatga tgatgatgat g
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<210> 50
<211> 21
<212> DNA
<213> Homo sapien

<400> 50
cttcttggtt ctcctgtcct g
21

<210> 51
<211> 32
<212> DNA
<213> Homo sapien

<400> 51
gacctctcga gggatttggg gaattatttg ag
32

<210> 52
<211> 21
<212> DNA
<213> Homo sapien

<400> 52
aactagaagg cacagtcgag g

21

<210> 53
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Human chorionic
gonadotropin gene 6 sequences and Corynebacterium
diphtheriae diphtheria toxin A sequence

<400> 53
gagatgttcc agggcgtgat gatg
24

<210> 54
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides
according to specification

<400> 54
gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn
60
nnnnnnnnnn aucguuaacu aauaaacuac uaacugggug aacuucuguu uuuuucucga
120
gcugcag
127

<210> 55
<211> 127
<212> RNA
<213> Artificial Sequence

<220>
<223> PTM intramolecular base paired stem

<221> misc_feature
<222> (57)...(70)
<223> Loop comprising a combination of 14 nucleotides

according to specification

<400> 55

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn
60

nnnnnnnnnnn aucguuaacu aauaaaacuac uaacugggug aacuucugua uuauucucga
120

gcugcag

127

<210> 56

<211> 127

<212> RNA

<213> Artificial Sequence

<220>

<223> PTM intramolecular base paired stem

<221> misc_feature

<222> (57)...(70)

<223> Loop comprising a combination of 14 nucleotides
according to specification

<400> 56

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn
60

nnnnnnnnnnn aucguuaacu aauaaaacuac uaacugggug aaguucuguc cuugucucga
120

gcugcag

127

<210> 57

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> trans-spliced product containing Human chorionic
gonadotropin gene 6 sequences and Corynebacterium
diphtheriae diphtheria toxin A sequences

<400> 57

caggggacgc accaaggatg gagatgttcc agggcgctga tcatgttgg tattttttt
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aaatcttttg tcatggaaaaa ctttttttcg taccacggga ctaaacctgg ttatgttagat
120

tccattcaaa aa

132

<210> 58
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli
lacZ gene

<400> 58
gaattcggta ccatgggg
18

<210> 59
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli
lacZ gene

<400> 59
cgtttacagg taagaggatc ctccggaggg ccc
33

<210> 60
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial Sequence derived from Escherichia coli
lacZ gene

<400> 60
tggtgtcaaa aataataagt taacaagctt
30

<210> 61
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product containing Escherichia coli
lacZ gene sequences and Human chorionic

gonadotropin gene 6 exon 2 sequences

<400> 61

cagcagcccc tgtaaacggg gatac
25

<210> 62

<211> 286

<212> DNA

<213> Artificial Sequence

<220>

<223> trans-spliced product containing Escherichia coli
lacZ gene sequences

<400> 62

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60

gtaacagtct tggcggttgc gctaaatact ggcaggcggt tcgtcagtat ccccgttac
120

agggcggctt cgtctaataa tggactggg tggatcagtc gctgattaaa tatgatgaaa
180

acgggcaacc cgtggtcggc ttacggcggt gattttggcg atacgccgaa cgatcgccag
240

ttctgtatga acggctcggt cttgccgac cgcacgcccgc atccag
286

<210> 63

<211> 196

<212> DNA

<213> Artificial Sequence

<220>

<223> trans-spliced product containing Escherichia coli
lacZ gene sequences

<400> 63

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gtaacagtct tggcggttgc gctaaatact ggcaggcggt tcgtcagtat ccccgttac
120

aggggctgct gctgttgctg ctgctgagca tggcgccggac atgggcattcc aaggagccac
180

ttcggccacg gtgccg
196

<210> 64

<211> 420

<212> DNA
<213> Artificial Sequence

<220>
<223> trans-spliced product comprising cystic fibrosis
transmembrane regulator-derived sequences and His
tag sequence

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aacgttgctc gagtactaac tggaacctct tcttttttt cctgcagact tcacttctaa
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ttagtattat gggagaactg gagccttcag aggtaaaat taagcacagt ggaagaattt
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cattctgttc tcagtttcc tggattatgc ctggcaccat taaagaaaat atcatcttg
240
gcggccgcca ctgtgctgga tatctgcaga attccaccac actggactag tggatccgag
300
ctcggtagcca aggttaagtt taaaccgctg atcagcctcg actgtgcctt ctagttgcca
360
gccatctgtt gtttgcctt ccccggtgcc ttccttgacc ctggaaggtg ccactccac
420

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Splice junction sequence

<400> 65
atgttccagg gcgtgatgat
20

<210> 66
<211> 7
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<213> Artificial Sequence

<220>
<223> C terminal residues from glutathione -S-
transferase

<400> 66
Asp Tyr Lys Asp Asp Asp Lys

1

5

<210> 67
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequences derived
from Escherichia coli lacZ gene

<400> 67
ggagttgatc ccgtc
15

<210> 68
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequences derived
from Escherichia coli lacZ gene

<400> 68
gcagtgtcct tgtgcggta ccctgcaggg cggcttc
37

<210> 69
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> Binding domain of PTM

<400> 69
gattcacttg ctccaattat catcctaagc agaagtgtat attcttattt gtaaagattc
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tattaactca tttgattcaa aatatttaaa atacttcctg tttcatactc tgctatgcac
120

<210> 70
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Spacer sequence of PTM

<400> 70
aacattatta taacgttgct cgaa
24

<210> 71
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Branch point, pyrimidine tract and acceptor splice site of PTM

<400> 71
tactaactgg tacctcttct ttttttttg atatcctgca gggcggc
47

<210> 72
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Donor site and spacer sequence of PTM

<400> 72
tgaacggtaa gtgttatcac cgatatgtgt ctaacctgat tcgggccttc gatacgctaa
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gatccaccgg
70

<210> 73
<211> 260
<212> DNA
<213> Artificial Sequence

<220>
<223> Binding domain of spacer sequence

<400> 73
tcaaaaaagtt ttcacataat ttcttacctc ttcttgaatt catgcttga tgacgcttct
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120

ctggaaaact gataacacaa tcaaattctt ccactgtgct taaaaaaacc ctcttgaatt
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ctccatttct cccataatca tcattacaac tgaactctgg aaataaaacc catcattatt
240
aactcattat caaatcacgc
260

<210> 74
<211> 22
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<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 74
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22

<210> 75
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 75
actcagtgtg attccacctt ctc
23

<210> 76
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 76
gacctctgca gacttcactt ctaatgatga ttatgg
36

<210> 77
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 77
ctaggatccc gttctttgt tcttcactat taa
33

<210> 78
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 78
ctagggttac cgaagtaaaa ccatacttat tag
33

<210> 79
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 79
gcatggttac cctgcagggg ctgctgctgt tgctg
35

<210> 80
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 80
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37

<210> 81
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Binding domain of PTM molecule

<400> 81
accatcatt attaggtcat tat
23

<210> 82
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 82
gatcaaatct gtcgatcctt cc
22

<210> 83
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 83
ctgatccacc cagtcccatt a
21

<210> 84
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer

<400> 84
gactgatcca cccagtccta ga
22

<210> 85
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
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<221> misc_feature
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<400> 85
ccgcggnnnn nnnnnnnnnn nnnnnnnnnn gggttccgggt accggcggct tc
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<210> 86
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 86
tttatcccc gtttacaggg cggcttcgtc tggactggg tggatcagtc gctgattaaa
60
tatgatgaaa a
71

<210> 87
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide

<400> 87
tttggcgata cgccgaacga tcgccagttc tgtatgaacg gtctggtctt tgccgaccgc
60
acgccg
66

<210> 88
<211> 192
<212> DNA
<213> Artificial Sequence

<220>
<223> PTM sequences

<400> 88

acgagcttgc tcatgatgat catggcgag ttagaaccaa gtgaaggcaa gatcaaacat
60
tccggccgca tcagctttg cagccattc agttggatca tgcccggtac catcaaggag
120
aacataatct tcggcgtagt ttacgacgag taccgctatc gctcggtgat taaggcctgt
180
cagttggagg ag
192

<210> 89
<211> 25
<212> DNA
<213> Artificial Sequence

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<223> Oligonucleotide

<400> 89
gagcaggcaa gacgagcttg ctcat
25

<210> 90
<211> 28
<212> DNA
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<220>
<223> Oligonucleotide

<400> 90
gagaacataa tcttcggcgt cagttacg
28

<210> 91
<211> 30
<212> DNA
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<220>
<223> Oligonucleotide

<400> 91
gtcagttgga ggaggacatc tccaaagtgg
30

<210> 92
<211> 192
<212> DNA

<213> Artificial Sequence

<400> 92

acgagcttgc tcatgatgat catggcgag ttagaaccaa gtgaaggcaa gatcaaacat
60

tccggccgca tcagctttg cagccaattc agttggatca tgcccggtac catcaaggag
120

aacataatct tcggcgtcag ttacgacgag taccgctatc gctcgggtat taaggcctgt
180

cagttggagg ag

192

<210> 93

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> PTM sequences

<400> 93

aaatatcatt ggtgtttctt atgatga

27

<210> 94

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 94

ccaactagaa gaggacatct ccaagttgc

30

<210> 95

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 95

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30

<210> 96
<211> 27
<212> DNA
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<220>
<223> Oligonucleotide

<400> 96
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27

<210> 97
<211> 27
<212> DNA
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<220>
<223> Oligonucleotide

<400> 97
ccaactagaa gaggacatct ccaagtt
27

<210> 98
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> 5' splice site

<400> 98
cgtttacagg taagtggatc c
21

<210> 99
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> 3' splice site

<400> 99
ctgcagggcg gcttcgtcta ataatgg
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<210> 100
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence from trans-splicing domain

<400> 100
tactaactgg tacctcttct ttttttttg atatcctgca gggcggc
47

<210> 101
<211> 1584
<212> DNA
<213> Artificial Sequence

<220>
<223> CFTR PTM

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120
ccttctgttg attctgctga caatctatct gaaaaattgg aaagagaatg ggatagagag
180
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240
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300
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360
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420
gccattttg gccttcatca cattggaatg cagatgagaa tagctatgtt tagttgatt
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tataagaaga cttaaagct gtcaagccgt gttctagata aaataagtat tggacaactt
540
gttagtctcc tttccaacaa cctgaacaaa tttgatgaag gacttgcatt ggcacattc
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720
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1380
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1440
aagatcaaac attccggcccg catcagctt tgcagccat tcagttggat catgcccggt
1500
accatcaagg agaacataat cttcggcgtc agttacgacg agtaccgcta tcgctcggtg
1560
attaaggcct gtcagttgga ggag
1584

<210> 102

<211> 323

<212> DNA

<213> Artificial Sequence

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<223> trans-splicing domain of CFTR PTM

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120
ctgtatctat attcatcatt ggaaacacca atgatatttt cttaatggt gcctggcata
180
atcctggaaa actgataaca caatgaaatt cttccactgt gcttaatttt accctctgaa
240
ttctccattt ctcccataat catcattaca actgaactct ggaaataaaa cccatcatta
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323

<210> 103

<211> 165

<212> DNA

<213> Artificial Sequence

<220>

<223> PTM binding domain

<400> 103

gctagcaata atgacgaagc cgcccctcac gctcaggatt cacttgccctc caattatcat

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cctaaggcaga agtgtatatt cttatttgta aagattctat taactcattt gattcaaaat

120

atttaaaata cttcctgttt cacctactct gctatgcacc cgccgg

165

<210> 104

<211> 225

<212> DNA

<213> Artificial Sequence

<220>

<223> trans-splicing domain of CFTR PTM

<400> 104

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gcagaagtgt atattcttat ttgtaaagat tctattaact catttgattc aaaatattta

120

aaatacttcc tggcacctt actctgctat gcacccgcgg aacattatta taacgttgct

180

cgaataactaa ctggcacctc ttctttttt tttgatatcc tgcag

225

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<212> DNA

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<223> CFTR PTM sequence

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agtggaaagaa tttcattctg ttctcagttt tcctggatta tgcctggcac cattaaagaa

120
aatatcatct ttgggtttc ctatgatcaa tatagataca gaagcgtcat caaagcatgc
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3060

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3069